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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,381	07/06/2003	Werner Hakenjos	(H)02HAK0459USP	7422

EXAMINER	
TALBOT, MICHAEL	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/614,381	Applicant(s) HAKENJOS, WERNER	
	Examiner Michael W. Talbot	Art Unit 3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 6-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities:

Claim 1 recites the limitation "the cutting edges" in lines 5 through 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the base" in line 10. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,3,4,6 and 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Maier '389. Maier '389 shows in Figures 1-5 a drilling tool made of high strength steel comprising a shank (1) with a first end (non-flute side) and a second end having a drill head (4) with flutes (20) and a centering cone (16). Maier '389 shows the drill head and centering cone each having at least three lips (5,6,7) and main cutting edges (10,12,13,14) being partially relief-ground wherein the centering cone projects from an area that is described by the main cutting edges by rotation of the drilling tool about its shank axis. Maier '389 shows the main cutting edges extending substantially perpendicular (25° from perpendicular) to the shank axis from the outer perimeter radially inwards down to a base (location between edges 13 and 14) of the centering cone. Maier '389 shows the centering cone having a smaller point angle than the main cutting edges (Figure 7). Maier '389 shows the shaft having at least one step (2) in the feed

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direction. Maier '389 shows the flanks (18,19) of the main cutting edges having a convexly shaped region in such a way that the drill works free of canting up to 10° to the normal of a work piece surface to be spot-drilled. Maier '389 shows the flanks of the secondary cutting edges (26) being relief-ground.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier '389 in view of Melin '267. Maier '389 lacks a clamping surface on the shank and a drilling tool with dual-sided drilling heads. Melin '267 shows in Figures 3 and 5 a clamping surface (11) on the shank of drilling tool (12) and dual-sided drilling head with different diameters (co. 2, lines 3-17). In view of this teaching of Melin '267, it would have been obvious to modify the drilling tool of Maier '389 to include a clamping surface and dual-sided drilling heads as taught in Melin '267 to enhance the clamping forces between the clamp means and the drilling tool to create a stronger connection and to include a reversible drilling tool which extends the life of the drilling tool and, with different diameters, has increase versatility.

6. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier '389 in view of Nuzzi et al. '681. Maier '389 lacks reference to a coating applied to the drilling tool for mechanical resistance and anti-corrosion. Nuzzi et al. '681 shows in Figure 1 a drilling tool (10) being made of HSS and coated with TiN, TiCN or TiAlN. In view of this teaching of Nuzzi et al. '681, it would have been obvious to add a coating disclosed in Nuzzi et al. '681 to

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the drilling tool of Maier '389 to provide a wear resistance coated surface which ultimately extends the life of the drilling tool by reducing friction and heat generation during cutting.

7. Claims 1,3,4,6 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hageman '967 in view of Maier '389. Hageman '967 shows in Figures 1-4 a drilling tool made of hardened steel comprising a shank (12) with a first end (14) and a second end (16) having a drill head with flutes and a centering cone (38). Hageman '967 shows the drill head and centering cone each having two lips (40,42) and main cutting edges (26,28,44,46) being partially relief-ground wherein the centering cone projects from an area that is described by the main cutting edges by rotation of the drilling tool about its shank axis. Hageman '967 shows the main cutting edges extending substantially perpendicular (Fig. 3,4) to the shank axis from the outer perimeter radially inwards down to a base (at bottom of 38) of the centering cone.

Hageman '967 lacks at least three main cutting edges, and at least three cutting edges on the centering cone. Maier '389 shows in Figures 1-5 a drilling tool with flutes (20) and a centering cone (16). Maier '389 shows the drill head and centering cone each having at least three lips (5,6,7) and main cutting edges (10,12,13,14) being partially relief-ground and having a smaller point angle than the main cutting edges (Figure 7). Maier '389 shows the flanks (18,19) of the main cutting edges having a convexly shaped region in such a way that the drill works free of canting up to 10° to the normal of a work piece surface to be spot-drilled. Maier '389 shows the flanks of the secondary cutting edges (26) being relief-ground. In view of this teaching of Maier '389, it would have been obvious to modify the drilling tool of Hageman '967 to include a third main cutting edge and three cutting edges on the centering cone as shown in Maier '389 to redistribute the cutting forces over a greater area (3 edges in lieu of two) to reduce the wear and ultimately increase the life of the drilling tool.

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8. Claims 7 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hageman '967 in view of Maier '389, further in view of Melin '267. Hageman '967 in view of Maier '389 lacks a clamping surface on the shank and a drilling tool with dual-sided drilling heads. Melin '267 shows in Figures 3 and 5 a clamping surface (11) on the shank of drilling tool (12) and dual-sided drilling head with different diameters (col. 2, lines 3-17). In view of this teaching of Melin '267, it would have been obvious to modify the drilling tool of Hageman '967 in view of Maier '389 to include a clamping surface and dual-sided drilling heads shown in Moon '563 to enhance the clamping forces between the clamp means and the drilling tool to create a stronger connection and to include a reversible drilling tool which extends the life of the drilling tool and, with different diameters, has increase versatility.

9. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hageman '967 in view of Maier '389, further in view of Nuzzi et al. '681. Hageman '967 in view of Maier '389 lacks reference to a coating applied to the drilling tool for mechanical resistance and anti-corrosion. Nuzzi et al. '681 shows in Figure 1 a drilling tool (10) being made of HSS and coated with TiN, TiCN or TiAlN. In view of this teaching of Nuzzi et al. '681, it would have been obvious to add a coating disclosed in Nuzzi et al. '681 to the drilling tool of Hageman '967 in view of Maier '389 to provide a wear resistance coated surface which ultimately extends the life of the drilling tool by reducing friction and heat generation during cutting.

Response to Arguments

10. Applicant's arguments filed 06 August 2007 have been fully considered but they are not persuasive.

11. Examiner respectfully disagrees with Applicant's assertion that the Maier '389 reference does not show the main cutting edges being "substantially perpendicular" to the shank axis. Maier '389 clearly shows the main cutting edges (10,12,13,14) extending substantially

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perpendicular (25° from perpendicular) to the shank axis from the outer perimeter radially inwards down to a base (location between edges 13 and 14) of the centering cone, as broadly and reasonably interpreted as the cutting edges aligned closer to being perpendicular to the shank axis than being parallel to the shank axis. In this case, the cutting edges are 25° (i.e. $(180^\circ - 130^\circ \text{ (point angle)}) / 2$) from being perpendicular to the shank axis and 65° from being parallel to the shank axis.

12. Examiner respectfully disagrees with Applicant's assertion that Hageman '967 reference does not teach a cone tip. Hageman '967 shows in Figures 1-4 a drilling tool made of hardened steel comprising a shank (12) with a first end (14) and a second end (16) having a drill head with flutes and a centering cone (38). The entire tip area is being broadly and reasonably interpreted as the centering cone, and therefore the main cutting edges terminate at the base (at bottom of 38) of this cone as viewed in Figs 2 and 3, and not below the base of the cone as indicated by Applicant.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

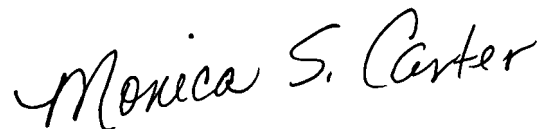
14. Any inquiry concerning the content of this communication from the examiner should be directed to Michael W. Talbot, whose telephone number is 571-272-4481. The examiner's office hours are typically 8:30am until 5:00pm, Monday through Friday. The examiner's supervisor, Mrs. Monica S. Carter, may be reached at 571-272-4475.

In order to reduce pendency and avoid potential delays, group 3720 is encouraging FAXing of responses to Office Actions directly into the Group at FAX number 571-273-8300. This practice may be used for filling papers not requiring a fee. It may also be used for filing papers, which require a fee, by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Michael W. Talbot of Art Unit 3722 at the top of your cover sheet.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MWT
Examiner
2 October 2007



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